

Electronic Materials

Alkyl Silicate

Applications

Various high-purity synthetic silica ◊ Inorganic coating agents, Binders, Cross-linking agents, Dehydrating agents, etc.

Packing : please contact us.

Characteristics

This product is high purity alkyl silicate refined through distillation after metallic silicon is reacted with alcohol. Tetramethyl orthosilicate (Si(OCH₃)₄), a single substance, can be easily hydrolyzed and condensed in alcohol to produce alcoholic silica sol which has excellent coating and binding properties. "Methyl silicate 51" prepared by condensing tetramethyl orthosilicate to oligomerize it into the average tetramer is a high content of silica (51%) and can be safely handled.

Properties

The representative grades are shown below.

Items	unit	Tetramethyl orthosilicate (monomer)	Methyl silicate 51 (average tetramer)	Tetra-n-propylsilane
Molecular Formula	-	Si(OCH ₃) ₄	CH ₃ O[Si(OCH ₃) ₂ O] ₃ CH ₃	Si(OCH ₂ CH ₂ CH ₃) ₄
Molecular Weight	-	152.2	470.7	264.4
Specific Gravity (25°C)	-	1.03	1.18	0.91
Viscosity (25°C)	mPa·s	0.6	5	1.3
Appearance	-	Colorless transparent	Colorless transparent	Colorless transparent
Color (APHA)	-	Below 10	Below 20	Below 20
Silica content	%	39	51	22.7
Purity (by GC)	%	99.5 or more	(oligomer mixture)	95.0 or more
Alkaline Metals Impurities	ppb	Below 100	Below 100	Below 100
Heavy Metals Impurities	ppb	Below 100	Below 100	Below 100

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◊ Various high-purity synthetic silica ◊ Various high-purity synthetic silica ◊ Binders
◊ Cross-linking agents ◊ Dehydrating agents, etc.



Precaution in Handling

The Fire Services Act: the 4th class, the 2nd petroleum type products (water-desoluble) Tetramethyl orthosilicate vapor, when exposed to cornea, gradually causes corrosion, which in turn leads to severe pain. Wear goggles-type protective glasses and handle tetramethyl orthosilicate in a well-ventilated place.